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SUMMARY OF

# UNIVERSAL COMPLIANCE

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# THE ATOMIC AGE HISTORICAL OVERVIEW

## ***Laying the scientific foundations, 1895 to 1932***

Beginning in 1895 with Röntgen's discovery of X-rays, scientists unravelled the structure of the atom, revealing the electron and proton. During this period they also discovered radioactivity and three of its components, alpha and beta particles, and gamma radiation. The ability of X-rays to form images of hidden objects such as the bones in a human hand fascinated the public. Medical applications for radioactivity soon appeared.

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## ***The discovery of the neutron and fission, 1932 to 1939***

In 1932 the final major component of the atom, the neutron, was discovered, and in 1938 fission of uranium atoms by neutrons was carried out in Germany. The energy associated with fission opened the possibility for powerful weapons and also the production of energy for civilian use. The world drifted toward another massive world war.

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## ***Alerting governments to the possibility of nuclear weapons, 1940 to 1943***

Scientists in the United States, Great Britain, the Soviet Union, and Germany recognized the potential for nuclear weapons offered by fission and took steps to alert their governments. Each government responded differently due to its economic, political, and military situation. The United States, assisted by Great Britain, was in the best position to lay the scientific and technical foundations for producing an atomic bomb.

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### ***The Manhattan Project, the atomic bomb, and the end of World War II, 1943 to 1945***

Led by a group of eminent scientists, engineers, and army officers, the United States produced fissionable materials and assembled them into the three atomic bombs that were detonated in the summer of 1945. The decision to drop the bomb was influenced by military and political events occurring throughout the war, particularly in the final year of the struggle.

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### ***Domestic and international control of military and civilian use of nuclear energy, 1945 to 1947***

Domestic and international control of nuclear energy became a critical post-war issue. The Atomic Energy Commission was formed and took over control of all aspects of nuclear energy in the United States in 1947. The United Nations attempted to develop a policy for control of nuclear weapons, but the United States and the Soviet Union could not agree. This was but one component of the emerging Cold War between the two nations. Citizens of all nations saw the power of nuclear fission as massive threat as well as a source of useful energy for mankind.

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### ***The initial years of the arms race and the hydrogen bomb, 1947 to 1952***

In 1949, the Soviet Union exploded an atomic bomb and joined the race for nuclear weapons. Britain followed in 1952. In the same year, the United States detonated a thermonuclear device. The peaceful use of atomic energy for electric power generation and medical applications was envisioned by the United States and other nations.

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### ***The acceleration of the arms race to the Cuban Missile Crisis, 1953 to 1962***

The arms race accelerated with the explosion of a thermonuclear device by the Soviet Union in 1953. France became a nuclear power in 1960. Numerous nuclear tests were

performed by all the nuclear nations, and the total number of weapons grew rapidly. The testing generated a fear of radioactive fallout in the public and contributed to the debate on nuclear arms. The Cuban Missile Crisis (1962) brought the world to the brink of nuclear war. Paradoxically this confrontation caused the Soviet Union to build more missiles, while at the same time it created pressure in both the United States and the Soviet Union for control of nuclear weapons. During this period the United States proposed a program to harness nuclear energy for peaceful purposes, and construction of nuclear power plants began worldwide.

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### ***Nuclear treaties, mutually assured destruction, Three Mile Island and Chernobyl, 1963 to 1986***

In 1963 the Limited Nuclear Test Ban Treaty became the first agreement to control nuclear weapons. China joined the nuclear powers in 1964. The Non-Proliferation of Nuclear Weapons treaty was signed in 1968 by the five nuclear nations and 180 non-nuclear nations. Next came the Strategic Arms Limitation Talks (SALT I) signed by the United States and the Soviet Union in 1972. SALT II followed it in 1979. The United States accelerated the arms race with the Strategic Defence Initiative in 1983 and initiated Strategic Arms Reduction Talks (START) with the Soviet Union during the mid 1980s to limit nuclear warheads. The accidents at Three Mile Island in the United States (1979) and Chernobyl, in the Ukraine (1986) had adverse effects on the use of nuclear reactors for producing power

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### ***The end of the Cold War, disarmament, proliferation, and terrorism, 1986 to 2003***

The fall of the Berlin Wall in 1989 symbolized the end of the Cold War, but nuclear issues continued to be important. While the United States and Russia continued to reduce their nuclear stockpiles, both retained massive capabilities for nuclear destruction. In 1996 the United States signed the Comprehensive Test Ban Treaty, but as yet Congress has not ratified it. The management and disposal of radioactive waste

from military and civilian reactors became a major issue in the United States and Russia. Development of nuclear weapons by India, Pakistan, Israel, and North Korea further alarmed the world. By 2001, the acquisition of fissionable and radioactive materials by terrorist groups also became a major threat to world order. The public perception of nuclear threats, as reflected in political discourse, literature, and film, had changed radically since 1945.

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## **STRATEGY OF UNIVERSAL COMPLIANCE**

In 1995, when signatories to the Nuclear Non Proliferation Treaty (NPT) agreed to make the treaty permanent, they politically committed themselves to a stringent bargain. One hundred and seventy-three states pledged to give up forever the option of acquiring nuclear weapons, in return for an explicitly reaffirmed commitment by China, France, Russia, the United Kingdom, and the United States to eventually eliminate their nuclear arsenals. All states did so with the understanding that the treaty was imperfect but nonetheless made them all safer—individually and collectively. At the time, there was good reason for optimism. The Cold War was over. The number of states possessing nuclear weapons had declined, and the number of weapons was falling. But soon, the picture turned much darker. Trends suggested that the non-proliferation system built around the NPT was failing.

In May 1998, India announced that it had exploded five nuclear devices. Two weeks later, Pakistan boasted of six nuclear explosions of its own. Neither country had signed the NPT. Suddenly, the prospect loomed of a nuclear war in South Asia that could kill millions and irradiate a quarter of the globe. Neither the treaty nor the international community could stop two major countries from crossing the nuclear line.

The terrorist attacks on September 11, 2001, forced recognition that shadowy movements, not under the control of any state, were able to commit sophisticated attacks of urban terror. If such groups were to come into possession of nuclear weapons, they would presumably be willing to use them. After September 11, what had been an important problem—the transfer and proliferation of nuclear technology—suddenly became an urgent one.

Then, in 2003, news emerged that a network of scientists, engineers, and middlemen from Pakistan, Switzerland, England, Germany, Sri Lanka, and Malaysia had for years sold nuclear bomb designs and equipment necessary to produce nuclear weapons. Buyers included North Korea, Iran, Libya, and perhaps other states. This development raised the spectre of a “proliferation Wal-Mart.”

These three events cast a shadow over all nuclear non-proliferation efforts. They showed that despite major non-proliferation successes, the spread and potential use of nuclear weapons remains all too real. These and other events showed that much more needs to be done to reduce the possibility of nuclear war. All nations— not only those willing to sign the NPT— need to be covered; and access to weapons fuel needs to be far more tightly limited everywhere. Non-proliferation rules must be extended to individuals and corporations, too.

## TODAY'S THREATS

The Non-Proliferation Treaty is the centre of an interlocking network of agreements and organizations that have been used to effectively slow, but not stop, the spread of nuclear weapons. This non-proliferation regime was intended to encompass all the world's nations—those that had nuclear weapons and those that might want them some day. But the nations that created the regime could not force other countries to join the treaty. Nor have the regime members consistently adhered to their own commitments. Today serious problems exist that threaten both the use of nuclear weapons and the collapse of international restraints. Most dangerous is the wide availability of highly enriched uranium (HEU) and plutonium, the fissile materials that form the cores of nuclear weapons. These materials have become more accessible to terrorists because of the collapse of the Soviet Union and the poor security at nuclear stockpiles in the former Soviet republics and in dozens of other countries. There is also danger that new nations could acquire nuclear weapons by exploiting inadequacies in the NPT. As the treaty now stands, countries can acquire technologies that bring them to the brink of nuclear weapon capability without explicitly violating the agreement; they can then leave the treaty without penalty. The treaty regime was designed for a world in which threats came from states. It was not built to deal with terrorist groups bent on mass destruction or nuclear black marketers with murky connections to governments. Many of the activities of the clandestine Pakistani network violated no existing laws. The fact that the network was based in Pakistan highlights the challenge of persuading India, Pakistan, and Israel to accept rigorous non-proliferation obligations to control technology even though they have not joined the NPT. These three countries broke no treaty in acquiring nuclear weapons, but in varying degrees their status beyond the boundaries of the NPT-based regime undermines efforts to prevent the spread or use of nuclear weapons. There are other concerns. More than ten years after the end of the Cold War, the vast majority of countries feel that the five original nuclear-weapon states (China, France, Russia, the United Kingdom, and the United States) do not intend to fulfil their end of the NPT "bargain"— the pledge to eliminate nuclear weapons. Furthermore, these same five states, as the veto-wielding members of the United Nations Security Council, are divided

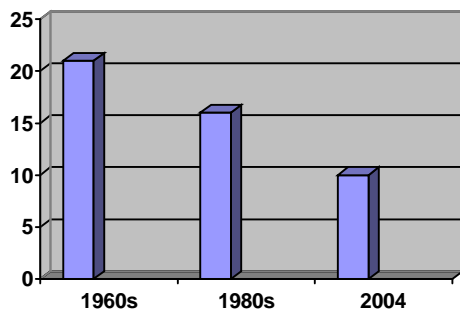
on how to respond to today's challenges, raising widespread doubts about the Security Council's ability to enforce non-proliferation commitments. Finally, there are rising doubts about the sustainability of the non-proliferation regime. This is most disturbing in nations that have the technological ability to develop nuclear weapons but have made a political decision not to. Some Brazilian and Japanese political leaders, for example, have openly suggested that their countries reconsider their nuclear weapon options. Some of the failures to contain proliferation result from flaws in the non-proliferation regime itself; many others stem from the unwillingness of leaders around the world to enforce commitments and resolutions earnestly passed. The United States' share of these failures has involved both Democratic and Republican administrations and Congresses led by both parties.

## THE GOOD NEWS

The news is not all bleak, however. There are positive trends to build upon. Since the signing of the Non-Proliferation Treaty in 1968, many more countries have given up nuclear weapon programs than have started them. There are fewer nuclear weapons in the world and fewer nations with nuclear weapon programs than there were twenty years ago. The U.S. and Russia continue to work cooperatively to dismantle and secure nuclear weapons and materials left over from the Cold War. Libya is an important success story and a model for other nations to follow as it verifiably dismantles its clandestine nuclear, chemical, and biological weapon capabilities. Iraq is a model of a different type, but it, too, no longer poses weapons of mass destruction (WMD) threats to its neighbours. The United States' use of force in Iraq to address a WMD threat (while mismanaged) has heightened international awareness of the dangers posed by proliferation. The results are particularly evident in the European Union (EU), which, forging a new resolve to combat proliferation, has intervened to curb programs in Libya and Iran and adopted a unified proliferation strategy that includes requirements for full compliance with non-proliferation norms in all its future trade and cooperation agreements. Adding to this effective use of "soft power," the EU now also asserts its willingness to use force against proliferation threats. International cooperation has increased, with more than one dozen nations formally joining the U.S.-led Proliferation Security Initiative (PSI) to interdict illegal transfers of weapons and materials. The Security Council in April 2004 agreed on a resolution requiring states to increase security for weapons and materials and enact stricter export controls and laws to criminalize proliferation activities by individuals and corporations. President George W. Bush, International Atomic Energy Agency (IAEA) Director-General Mohamed ElBaradei, and other leaders have proposed new plans to restrict the acquisition of nuclear technology for the production of enriched uranium and separated plutonium. Which trend will dominate—the positive or the negative? The world has arrived at a nuclear tipping point. Policy decisions in the next few years will determine if the global cooperation that has slashed the arsenals of chemical, biological, and nuclear weapons

and missile systems over the past two decades will continue, or if a dangerous new wave of proliferation will engulf the world.

### Countries with Nuclear Weapons or Programs



**Note:**

1960s: Twenty-one countries had weapons or considered research programs: Argentina, Australia, Brazil, China, Egypt, France, Germany, India, Israel, Italy, Japan, Norway, South Africa, the Soviet Union, Spain, Sweden, Switzerland, Taiwan, the United Kingdom, the United States, and Yugoslavia.

1980s: Sixteen countries had weapons or programs: Argentina, Brazil, China, France, India, Iran, Iraq, Israel, Libya, North Korea, Pakistan, South Africa, the Soviet Union, Taiwan, the United Kingdom, and the United States.

2004: Eight states have nuclear weapons: China, France, India, Israel, Pakistan, Russia, the United Kingdom, and the United States. Iran and North Korea are suspected of having active nuclear weapon programs.

## U.S. POLICY TODAY

The Bush administration arrived in office determined to combat nuclear, chemical, and biological weapons proliferation in fundamentally new ways. In two key documents, *The National Security Strategy of the United States of America* (September 2002) and the *National Strategy to Combat Weapons of Mass Destruction* (December 2002), the administration concluded:

- The threat of weapons of mass destruction is the highest priority for the United States and should be for other countries.
- The threat today is different from what it was during the Cold War, and greater.
- A small number of outlaw states exist that have no regard for international norms and are determined to acquire weapons of mass destruction.
- The proliferation threat is most dangerous at the nexus of these states, nuclear weapons and materials, and terrorists.

The administration's assessment did not, at first, appear dramatically different from those of previous administrations, which also acknowledged growing dangers. However, previous presidents had treated the weapons themselves as the problem. As long as they existed, there was a great danger that they would be used. "The weapons of war must be abolished," President John F. Kennedy said, "before they abolish us." Thus, Presidents Kennedy, Lyndon B. Johnson, and Richard M. Nixon negotiated and implemented the NPT as a means of stopping the spread of and eliminating nuclear weapons. President Nixon negotiated the Biological Weapons Convention banning biological weapons; President Ronald Reagan negotiated the Intermediate-Range Nuclear Forces Treaty (INF) banning intermediate-range missiles. President George H. W. Bush negotiated the Chemical Weapons Convention banning chemical weapons, and President Bill Clinton negotiated the Comprehensive Test Ban Treaty (CTBT). Each of these agreements codified a new global norm and provided the international legal

framework for ending existing weapons programs and preventing the initiation of new ones.

By contrast, the Bush administration shifted the focus from eliminating weapons to eliminating regimes. Whereas President Clinton declared in 1994 an “unusual and extraordinary threat to the national security...of the United States posed by *the proliferation of nuclear, biological, and chemical weapons* and the means of delivering such weapons,” President Bush, in his January 2003 State of the Union address, framed the issue differently: “the gravest danger facing America and the world, is *outlaw regimes that seek and possess nuclear, chemical, and biological weapons*” (emphasis added). In effect, the administration changed the focus from “what” to “who.” Following this targeted approach, the Bush administration highlighted “new methods of deterrence” to make clear that the United States “reserves the right to respond with overwhelming force—including through resort to all of our options—to the use of WMD against the United States, our forces abroad, and friends and allies.” Some officials advocated development of a new, more usable type of nuclear warhead for counter proliferation missions. The administration and Congress doubled the budgets for a national antimissile system. Most dramatically, the administration highlighted the necessity of regime change to remove threats posed by irredeemable governments seeking WMD, particularly the “Axis of Evil” states of Iraq, North Korea, and Iran. The Iraq War focused media and public attention on the tactic of pre-emptive war, but forcible regime change was the strategic innovation.

The Bush administration and supporting strategists deserve credit for highlighting the need to enforce and enhance the traditional non-proliferation regime. Too much attention had been paid historically to obtaining signatures on treaties, and not enough to achieving compliance with them. Too many dangerous activities are not encompassed by existing agreements, and are therefore tolerated. The absence of a collective political will to stop bad actors, by force if necessary, undermined deterrence.

The United States itself had routinely made proliferation concerns secondary to other strategic and economic issues in relations with key states such as Pakistan, Israel, and Iraq. In contrast, the Bush administration’s resolve helped motivate others to strengthen non-military means of enforcement. The strong belief that some actors cannot be

reformed helped sharpen international threat assessments and made governments in proliferate states think harder about whether to change their behaviour, lest they be removed.

However, the new administration strategy, like the ones before it, proved insufficient to answer the new threats. Accordingly, on February 11, 2004, the president proposed initiatives that, if implemented, would increase the ability of the United States and the international community to stem the spread of nuclear weapons. These initiatives included making all exports from the forty-member Nuclear Suppliers Group conditional on recipients adopting new, tougher inspections by the IAEA; expanding the Nunn-Lugar programs that finance the elimination of nuclear, chemical, and biological weapons in the former Soviet Union; and enhancing the IAEA's capability to detect cheating and respond to treaty violations. The administration has not, however, put money or significant political effort behind these proposals. Its proposed budget for fiscal year 2005 cuts rather than increases funding for Nunn-Lugar programs and fails to provide any increase in the U.S. contribution to the IAEA— an agency whose responsibilities have greatly increased while its budget has stayed flat. The core problem is that stopping the spread of nuclear weapons requires more international teamwork than the Bush administration recognizes, and more international resolve than previous administrations could muster. Nuclear weapons, material, and know-how are threats wherever they exist, not only in a handful of "evil" states. The United States cannot defeat these threats alone, or even with small coalitions of the willing. It needs sustained cooperation from dozens of diverse nations to broaden, toughen, and enforce non-proliferation rules—including China, Russia, France, the United Kingdom, and leading states that have forsworn nuclear weapons, such as Argentina, Brazil, Germany, Japan, South Africa, and Sweden. These and other states must be persuaded to strengthen non-proliferation rules. In exchange, many states, especially those that have given up nuclear weapons, will want to know that burdensome new rules and costly enforcement will ultimately enhance their security. The nuclear weapon states must show that tougher non-proliferation rules not only benefit the powerful but constrain them as well. Non-proliferation is a set of bargains whose fairness must be self-evident if the majority of countries are going to support its enforcement. The new challenges make it clear

beyond denial that “racing from threat to threat” does not suffice. This is a time that demands systemic change: a new strategy to defeat old and new threats before they become catastrophes.

## UNIVERSAL COMPLIANCE

The strategic aim of non-proliferation policy must now be to achieve *universal compliance* with the norms and terms of a deepened nuclear non-proliferation regime. Compliance means more than signatures on treaties, or declarations of fine intent—it means actual performance. Universal means that all actors must comply with those norms and terms that apply to them. This includes states that have joined the NPT, and those that have not. It also includes nonstate actors—corporations and individuals. The burden of compliance extends not only to states seeking nuclear weapon capabilities through dual-use fuel cycle programs or those abetting proliferation through technology transfers; it also applies to nuclear weapon states that are not honouring pledges they have made. Not all countries bear the same global responsibilities or face the same threats. It is unreasonable to expect all to be limited to the same capabilities. Police possess certain powers and capabilities that average citizens do not, but in healthy and just societies the use of these powers is constrained by law, and when abuses occur, citizens have recourse to correct them. The current nuclear order gives five states the right to possess nuclear weapons *and*, as veto-holding members of the Security Council, great influence in setting and enforcing non-proliferation rules. To sustain—much less strengthen—this order, the “advantaged” minority must ensure that the majority perceives that it is beneficial and fair. Universal compliance seeks to achieve this balance of obligations. It tries to correct the impression that the states with nuclear weapons are getting much more out of the non-proliferation regime than are others. The name of the strategy itself is both a reminder of the ultimate goal and a guide to ensure that each tactical step moves toward that goal. Progress toward universal compliance necessarily will be uneven. Attention and resources should be concentrated first and foremost on redressing the most pressing threats: those most likely to lead to nuclear use or to spreading waves of proliferation and instability. Six obligations form the core of the universal compliance strategy. Their successful fulfilment will answer the most pressing proliferation problems. Each of these general objectives requires subsidiary national and international policies, resources, and institutional reforms. Some of the

necessary steps require new international and national laws and voluntary codes of conduct, while others require only the will to live up to existing commitments.

### ***1. NO NEW NUCLEAR WEAPON STATES.***

Non–nuclear weapon states must reaffirm commitments never to acquire nuclear weapons. This commitment must evolve to proscribe the further national acquisition of facilities that can produce materials directly usable in nuclear weapons (separated plutonium and HEU). The United States and other nations must, in turn, provide a guaranteed supply of the fuel and services necessary for nuclear energy.

Eight states possess nuclear weapons without having violated the NPT. Two states—North Korea and Iran—have acquired or seek to acquire nuclear weapon capabilities in violation of their commitments. The immediate challenge is to induce these two states to relinquish nuclear weapon capabilities, and, in the process, to strengthen non-proliferation rules to deter other actors from seeking nuclear weapons in the future. To discourage countries from building up their capabilities to produce nuclear weapons and then leave the treaty, the Security Council should pass a new resolution requiring that a state that withdraws from the NPT remain responsible for violations committed while still a party to the treaty. The resolution should also bar states that withdraw from the treaty— whether in violation of its terms or not—from legally using nuclear materials, facilities, equipment, or technologies acquired internationally before their withdrawal. To prevent nations from acquiring nuclear weapon capabilities, all states should agree to suspend nuclear cooperation with countries that the IAEA cannot certify are in full compliance with their nuclear non-proliferation obligations.

To remove dangerous ambiguity in interpretations of the NPT, leading technology suppliers, and eventually the IAEA, should establish that no new states should acquire the facilities to enrich uranium or separate plutonium. In return, states in compliance with all IAEA requirements should receive fuel for civilian nuclear applications on a guaranteed, cost-effective basis from existing sources. Prior to the 2005 NPT Review

Conference, to augment their collective will to enforce non-proliferation norms and terms, the heads of state of the U.S., China, France, Russia, and the United Kingdom should convene their first-ever summit focused exclusively on this subject.

## ***2. SECURE ALL NUCLEAR MATERIALS.***

All states must maintain robust standards and mechanisms for securing, monitoring, and accounting for all fissile materials in any form. Such mechanisms are necessary both to prevent nuclear terrorism and to create the potential for secure nuclear disarmament.

Acquiring nuclear materials—whether by making, buying, or stealing them—is currently the single most difficult step for terrorists and states seeking nuclear weapons. Therefore, the security of stockpiles is absolutely important—as vital an element of defence as any weapons system. The United States should therefore encourage formation of a “Contact Group to Prevent Nuclear Terrorism.” The Contact Group would involve special envoys appointed by and reporting directly to the heads of state of key nations that possess nuclear weapons or fissile material stocks—including China, France, Germany, India, Israel, Japan, Pakistan, Russia, South Africa, the United Kingdom, and the United States. The group’s objective would be to establish the highest possible standards of security for nuclear weapons and materials. All members would be pressed to uphold these standards and arrange for assistance to those that need technical or financial help to achieve them. In addition, the United States should quickly identify, secure, and remove nuclear materials from all vulnerable sites—a “Global Cleanout.”

### **3. STOP ILLEGAL TRANSFERS.**

Nations must establish enforceable prohibitions against individuals, corporations, and states assisting others in secretly acquiring the technology, material, and know-how needed for nuclear weapons.

Non-proliferation norms and rules must be universal—they must apply to all states and to all potential nonstate actors. The Security Council took a vital step in this direction by passing Resolution 1540 in April 2004. The resolution requires all states to establish and enforce national legislation to secure nuclear materials, strengthen export controls, and criminalize illicit trade. Because Resolution 1540's obligations are framed under Chapter VII of the United Nations Charter, they are obligatory and warrant all necessary means to ensure compliance. To help enforce the laws adopted under the resolution, nations need to strengthen international mechanisms to guide exchanges of sensitive equipment, material, and know-how. Members of the Nuclear Suppliers Group have volunteered to share data with the IAEA, but they have not always done so. This kind of transparency arrangement should be expanded and made obligatory for transfers of all controlled items. Such a system would protect important commercial interests by establishing a legal basis for discriminating between legitimate commerce and illegitimate proliferation. Undeclared exchanges would be illegal on their face, while declared exchanges would be conducted under existing export control and customs regulations. Going further, more than a dozen states have committed themselves to the Proliferation Security Initiative. Its purpose is to detect and, if necessary, interdict proliferation activities within a nation's own jurisdiction. The initiative's scope should be widened to international waterways and airspaces, as is the case with piracy, hijacking, and slavery.

#### ***4. DEVALUE THE POLITICAL AND MILITARY CURRENCY OF NUCLEAR WEAPONS.***

All states must honour their obligations to end nuclear explosive testing, and must diminish the role of nuclear weapons in security policies and international politics. They must also identify and strive to create the conditions necessary to eliminate all nuclear arsenals verifiably.

To comply with commitments made in 1968 and explicitly reaffirmed in 1995 and 2000, the United States must disavow the development of any new types of nuclear weapons, reaffirm the current moratorium on nuclear weapon testing, and ratify the CTBT. U.S. and North Atlantic Treaty Organization (NATO) doctrine should narrow rather than widen the role of nuclear weapons. To reduce the risks of inadvertent nuclear war or a renewed arms race, the U.S. and Russia should further increase the time decision makers would have before deciding to launch nuclear weapons, and should make irreversible and verifiable the nuclear reductions required under the 2002 Treaty of Moscow. The core bargain of the NPT, and of global non-proliferation politics, can neither be ignored nor wished away. It buttresses the international security system and informs the political expectations of citizens and leaders around the world. On the other hand, it remains unclear whether thousands of nuclear weapons and uncounted thousands of tons of fissile materials can be verifiably decommissioned and secured in ways that would make the world safer and more stable. Only the United Kingdom has begun to analyze the steps necessary to achieve mutual and verifiable nuclear disarmament. The United States should go further, and produce a detailed road map of the steps it would have to take to verifiably eliminate its nuclear arsenal. At the 2005 NPT Review Conference, the United States should encourage all states possessing weapon-usable fissile materials to follow suit. By defining the level of transparency and accounting accuracy necessary to verify elimination of all nuclear weapons, this process would begin to illuminate whether total disarmament is actually feasible, and if it is not, what alternative actions would enhance global security and fairness.

## **5. COMMIT TO CONFLICT RESOLUTION.**

States that possess nuclear weapons must use their leadership to resolve regional conflicts that compel or excuse some states' pursuit of security by means of nuclear, biological, or chemical weapons.

Because the use of nuclear weapons could result in staggering casualties and global disorder, states that possess these weapons—including India, Israel, Pakistan, and possibly North Korea—have a special obligation to ensure that they are not used and do not spread. To help these states reduce nuclear tensions and eventually disarm, China, France, Russia, the United Kingdom, and the United States must concentrate their diplomatic influence on defusing the conflicts in the Middle East, South Asia, and Northeast Asia that underlie the determination of some states to possess nuclear weapons. These conflicts are the triggers of potential nuclear use. Separate sections of this report detail strategies for addressing nuclear threats in the Middle East, South Asia, and Northeast Asia. But preventing the use of nuclear weapons and reversing proliferation in these regions cannot be left to the specialized domain of the nuclear non-proliferation regime. Arms control experts, non-proliferation inspectors, and nuclear scientists cannot solve these problems; national leaders must devote their energies and resources to resolving key regional security dilemmas and supporting political reforms necessary to remove the perceived need for nuclear weapons. For example, averting a nuclear and missile arms race between India and Pakistan requires progress in normalizing these two states' overall relationship, particularly concerning Kashmir. Achieving a zone free of weapons of mass destruction in the Middle East will require normalization of relations between Israel and other regional states and entities, which in turn will require a cessation of terrorism and a just settlement of the Israeli-Palestinian conflict.

## 6. SOLVE THE THREE-STATE PROBLEM.

The unrealistic demand that India, Israel, and Pakistan (which never signed the NPT, and hence did not violate it in acquiring nuclear weapons) give up their weapons and join the NPT as non-nuclear states should be put aside. Instead, a policy should be pursued that focuses on persuading these three states to accept the same non-proliferation obligations accepted by the weapon state signatories. The three states should not be rewarded with trade in nuclear power reactors, but should receive cooperation to strengthen nuclear material security and reactor safety.

The universal compliance strategy offers a constructive way to deal with the critical challenge posed by India, Pakistan, and Israel—the so-called three-state problem. Unlike North Korea and Iran, these three countries never signed the NPT and therefore have retained the “right” to possess nuclear weapons. India and Pakistan have demonstrated their possession of nuclear weapons and proclaim themselves to be nuclear weapon states. They now press supporters of the non-proliferation regime to remove technology embargoes applied to them. Israel does not confirm or deny its widely recognized possession of nuclear weapons, but its nuclear status causes turmoil within the non-proliferation regime. Each of these states has committed itself to preventing further proliferation. Under the universal compliance strategy, the U.S. would stop demanding that India, Israel, and Pakistan give up their nuclear weapons and join the NPT as non-nuclear weapon states. Instead, the United States would lead a diplomatic initiative to persuade the three states to commit themselves politically to accepting the non-proliferation obligations accepted by China, France, Russia, the United Kingdom, and the United States. For example, the three states would agree to prevent proliferation exports, to secure nuclear weapons and materials, to reduce the role of nuclear weapons in their national security policies, and to eschew nuclear testing. If these states failed to comply with their commitments, they would be subject to the same sorts of U.S. sanctions and political pressures China and Russia have faced over

their past transgressions of non-proliferation rules. The goal of persuading India, Israel, and Pakistan to abandon nuclear weapons would not be dropped; rather these three states would be expected to eliminate their nuclear arsenals as and when China, France, Russia, the United Kingdom, and the United States eliminate theirs. Tolerating possession of nuclear weapons by India, Israel, and Pakistan does not mean rewarding these three states with nuclear reactors, as India, and more recently, Pakistan have sought. The United States and others would continue not to sell nuclear reactors to India, Israel, or Pakistan, pursuant to the Nuclear Suppliers Group agreement of 1992 barring such sales as long as the proposed recipient operates nuclear facilities that are not under international safeguards. This restriction on nuclear commerce is necessary to uphold the incentives that reward other states for complying with their obligation not to acquire nuclear weapons. If non-nuclear weapon states want to ease restrictions on nuclear commerce with India, Pakistan, and Israel, they should propose alternative guidelines. India, Pakistan, and Israel will not find it easy to embrace this arrangement, but each country's leadership has voiced strong support for the cause of non-proliferation. The approach here enables the three states to contribute constructively to international security without accepting obligations greater or less than those borne by China, France, Russia, the United Kingdom, and the United States. In return for explicitly shouldering the obligations of responsible international citizenship, India, Pakistan, and Israel would gain relief from unproductive, ritualistic hectoring or possible coercion to eliminate their nuclear arsenals before others do.

India may want additional benefits, but this desire flows from an anachronistic belief that the world somehow owes something to states with nuclear weapons. Today, obligations flow the other way. States possessing nuclear weapons should be judged by their contribution to the global interest in preventing the spread and use of these devices.

## **APPLYING THE STRATEGY TO REGIONAL CRISES**

### ***South Asia***

- Lead an initiative to ensure that Pakistan and India employ state-of-the-art practices and technologies to secure nuclear weapons, material, and know-how.
- Expand the scope of threat reduction programs.
- Encourage Pakistan and India to implement nuclear risk reduction practices.
- Encourage India and Pakistan to shape and join a global pause on all fissile material production.
- Encourage India and Pakistan to resolve the Kashmir dispute.
- Strengthen civilian political parties and institutions in Pakistan.
- Promote stable conventional force balances.
- Resist Indian demands to waive or amend non-proliferation prohibitions against nuclear technology commerce.

### ***Iran***

- Encourage European leaders to precisely define what Iran must do to suspend its fuel cycle activities and eventually dismantle its facilities.
- Encourage the EU to clarify the benefits Iran would gain in exchange for forswearing acquisition and operation of all fuel production capabilities.
- Encourage the EU to offer specific economic benefits if Tehran meets at least the EU's nuclear non-proliferation demands.
- Communicate to the current Iranian government that the United States will desist from regime-change efforts if Tehran verifiably forswears acquisition of capabilities to produce materials that can be used in nuclear weapons.
- Pursue nuclear negotiations while concurrently championing reform.
- Welcome and participate in a security dialogue among Persian Gulf states, including representatives of Iran and Iraq.

- Seek British, French, Russian, and Chinese cooperation to privately warn Iran that they are prepared to vote for sanctions if Iran refuses to implement a complete suspension and eventual elimination of fuel cycle capabilities and the matter comes to the Security Council.
- Clarify through the IAEA and the NPT Review Process that all states should suspend nuclear cooperation with any state for which the IAEA cannot provide sufficient assurances regarding the peaceful nature of that state's nuclear program.
- Introduce a Security Council resolution to make clear that any state that withdraws from the NPT remains responsible for violations committed while still a party to the treaty.
- Introduce a Security Council resolution that a state that withdraws from the treaty—whether or not it has violated it—may no longer make use of nuclear materials, facilities, equipment, or technology acquired from another country before its withdrawal.
- Negotiate bilateral nuclear technology transfer agreements, particularly involving the Nuclear Suppliers Group, that disallow the use or major transfers of nuclear materials, facilities, equipment, or technologies, in the event that the receiving state withdraws from the NPT.

### ***Middle East***

- Proactively call for a regional dialogue to negotiate and implement the conditions necessary to achieve a WMD-free zone.
- Establish threshold conditions for serious progress. All states and parties must recognize Israel's right to security and the right of Palestinians to a secure state. Dialogue must include all states in the region.
- Encourage friendly states and NGOs to conduct studies and dialogues exploring key conditions that would have to be met for a zone free of weapons of mass destruction to be implemented.

- Design the verification procedures and practices that would have to be implemented in the region.
- Provide the opportunity for outside powers to offer independent intelligence to help verify that parties are fulfilling their pledges.
- Push for high levels of transparency in national policies, budgets, and facilities.
- Encourage Israel to reaffirm its commitment not to be the first to introduce nuclear weapons into the Middle East.
- Encourage Israel to ratify the Chemical Weapons Convention and join the Biological Weapons Convention.
- Encourage Israel to declare that it has adopted an indefinite moratorium on producing plutonium and ceased the separation of plutonium from spent fuel.
- Encourage Israel to communicate to the 2005 NPT Review Conference that if and when a regional zone free of weapons of mass destruction is verifiably implemented and proved durable, Israel would be prepared to join the NPT as a non–nuclear weapon state.

#### Suspected Weapons or Programs in the Middle East

COUNTRY	NUCLEAR	BIOLOGICAL	CHEMICAL	MISSILE DELIVERY SYSTEMS
Israel	~ 100 suspected weapons <sup>a</sup>	Suspected program	Suspected weapons <sup>b</sup>	Nuclear-capable SRBMs and MRBMs
Iran	Suspected program	Suspected program	Suspected weapons <sup>c</sup>	SRBMs (Scud-B and -C, CSS-8), and a MRBMs
Syria	Status unknown	Suspected program	Suspected weapons <sup>d</sup>	SRBMs (Scud-B, -C, and -D, SS-21)
Egypt	—	Suspected program	Suspected weapons	SRBMs (Scud-B and -C)
Saudi Arabia	—	—	—	Chinese MRBMs (CSS-2)
Iraq	Dismantled program	Dismantled program	Dismantled program	Dismantled program
Libya	Renounced program	Renounced program	Renounced program	SRBMs
All others <sup>e</sup>	—	—	—	SRBMs

## ***North Korea and Northeast Asia***

- Determine whether and under what conditions North Korea is willing to relinquish its nuclear capabilities.
- Develop an international consensus through the Security Council that North Korea's actions are a threat to international peace and security and that North Korea's attempt to withdraw from an agreement it has violated is unacceptable.
- Fully test the will of North Korea to verifiably implement the irreversible dismantlement of all nuclear weapon capabilities in exchange for a fundamentally different relationship with the United States, including diplomatic relations and peaceful reconstruction assistance.
- Further enhance U.S. alliances with South Korea and Japan to broaden support for U.S. security objectives in the region, including the absence of nuclear weapons.
- Pursue rapid and ongoing negotiations with North Korea through a presidentially appointed envoy. This person must be fully committed to the negotiations, prepared and empowered to make serious progress, and meet with North Korean counterparts of sufficient rank to make progress.
- Prepare for the possibility that North Korea is unwilling to abandon its nuclear capabilities by reinforcing the diplomatic and military capabilities in the region to enhance deterrence and stability on the Korean peninsula and reduce incentives for other countries to follow North Korea's nuclear lead.
- Make clear that any attempt by North Korea to export nuclear materials or weapons will be considered an act of war against the United States resulting in the end to the Korean War cease-fire.

# Year End Nuclear Progress Report

By Ben Bain

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As 2005 comes to a close, there is good news to report on several government efforts aimed at stemming the spread of nuclear weapons. We are moving in the right direction, though not as fast nor as far as we could.

The Nunn-Lugar Program is a multi-pronged effort focused on deactivating or destroying nuclear warheads, chemical and biological munitions, and delivery vehicles as well as increasing security for weapon stockpiles and creating jobs for former weapons scientists in the former Soviet States. Begun in 1991 by Senator Richard Lugar (R-IL) and Senator Sam Nunn (D-GA), as of August 2005 the Nunn-Lugar program had deactivated or destroyed:

6,760 nuclear warheads

587 ICBMs

483 ICBM silos

32 ICBM mobile missile launchers

150 bombers

789 nuclear air-to-surface missiles

436 submarine missile launchers

549 submarine launched missiles

28 nuclear submarines

194 nuclear test tunnels

“The experience of Nunn-Lugar shows that, with determination and hard work, we can deny terrorists access to these devastating weapons,” says Senator Lugar.

However, much work remains to be done. The authors of the 2005 Carnegie report *Universal Compliance* say that “whether one judges by the percentage of Russian nuclear warheads and weapon-usable materials secured, the amount of fissile material destroyed, the number of facilities converted to commercial production, or the number of new permanent jobs created for weapon scientists, it is evident that less than half of the overall threat reduction mission in Russia has been completed.” Since the “biggest impediments to progress are political, not technical or financial,” their report recommends that the US “establish a senior coordinator, or focused coordination team, within the White House with a mandate to oversee, prioritize, and expedite threat reduction programs” and “launch a fast-paced initiative, in partnership with Russia, to fully protect Russian nuclear weapon-usable material by 2008.” The National Nuclear Security Agency (NNSA) estimates that the Material Protection, Control, and Accounting (MPC&A) program will not be completed until 2020, under current schedules.

The Global Threat Reduction Initiative is another important program taking steps in the right direction. Part of the NNSA, the mission of the GTRI is to “identify, secure, recover and/or facilitate the disposition of high-risk, vulnerable nuclear and radiological materials around the world that pose a threat to the United States and the international community.” This program got a lot of press this year for some of its exciting night time operations, in one case airlifting 14kg of HEU to Russia from the Czech Technical University in Prague. The GTRI is responsible for a broad set of tasks, from repatriating fissile material to converting reactors to run on LEU, and like the Nunn-Lugar program, is not moving forward as fast as hoped. To date, the program has secured 122kg of highly-enriched uranium at research reactors in 7 nations. Currently the GTRI plans to meet its goals within ten years. This program could be accelerated and “with the necessary resources and emphasis, the ten-year goal can – and should – be met in four years,” according to *Universal Compliance*. (For a more detailed discussion of the GTRI, see the Carnegie analysis “Cleaning House.”)

The Megatons to Megawatts program is a creative, commercially-sustainable solution to a rather large problem. After dismantling some of their nuclear warheads, Russia was

left with 500 metric tons of HEU. The Megatons to Megawatts program allows for the HEU to be diluted in Russia, then sold to the United States Enrichment Corporation, distributed to US power utility companies, and ultimately used to generate electricity. In fact, one-tenth of America's electricity comes from this Russian-origin fuel or as a spokesperson for the program might put it – one in ten holiday lights this season is powered by energy from former Soviet warheads. Through October, the program converted 255 metric tons of HEU – a little over half its goal. The program is scheduled for completion by 2015.

Despite the steady progress, the HEU still waiting to be diluted “remain[s] in weapon-usable form, to say nothing of the remaining Russian stockpile – which may amount to an additional 500 metric tons under uncertain security,” says the Carnegie report Universal Compliance. The report urges that down blending “be accelerated to ensure the fastest possible elimination of this material. Russia and the United States should agree to double the pace from 30 to 60 metric tons of HEU per year.”

The Proliferation Security Initiative (PSI) is an innovative approach to stopping weapon shipments, “their delivery systems, and related materials from reaching states and non-state actors of proliferation concern,” according to the US State Department PSI Fact Sheet. The PSI is an activity, not an organization, in which partner countries choose to participate, “employing their national capabilities to develop a broad range of legal, diplomatic, economic, military, and other tools to interdict” suspect shipments.

Created in May 2003, over 70 countries have now expressed support for the PSI Statement of Interdiction Principles. Universal Compliance notes, however, that “while the initiative is a valuable extension of export control implementation, it is not and cannot be a silver bullet to prevent proliferation to terrorists or states.” There are gaps in the program that can limit its effectiveness. Therefore, the Carnegie authors recommend that the international community “expand the scope of the PSI to cover shipments through international waters and airspace” and “ground the PSI in international law by

means of a UN Security Council Resolution.” (For more, see the Carnegie analysis “Putting PSI into Perspective.”)

The Container Security Initiative (CSI) focuses on suspect US-bound cargo in foreign ports. Container security is critical to protecting the US homeland given that 90 percent of all world cargo is shipped in containers and that 9 million cargo containers come into the country every year. As part of the initiative, teams of officers from the US Customs and Borders Protection (CBP) are dispatched to the participating ports to work with the host nations in identifying and inspecting suspect cargos before they arrive in US territory.

Just recently, the Argentine port in Buenos Aires joined the initiative, bringing the total number of participating ports to 41. Together, these ports handle about 75 percent of US-bound cargo and are located throughout the Americas, Europe, Asia, and Africa. By the end of 2006, the CSI hopes to increase the number of participating ports to 50. This initiative looks promising, but some important concerns need to be addressed. Senator Carl Levin (D-MI) raised some of these concerns before the Permanent Subcommittee on Investigations in May. Senator Levin highlighted issues such as the failure to persuade foreign governments to inspect all suspect containers, the high costs of keeping CBP officers overseas, and the lack of standards for inspection equipment.

These are just a few of the many programs in place working to reduce the threat from nuclear weapons and materials. Their successes are commendable. However, we must not be lulled into complacency. All these programs are doing good work, but with additional international political and financial support, work would be done faster and more comprehensively. As former Senator Nunn said in a speech this year, “The gravest danger in the world today is the threat of nuclear and other weapons of mass destruction,” and that “[w]e will prevent this danger only if every country accepts that it is the number one threat, and every country makes it a priority to cooperate for our common security.” There is much more to do in 2006.

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